

# PATENT ABSTRACTS OF JAPAN

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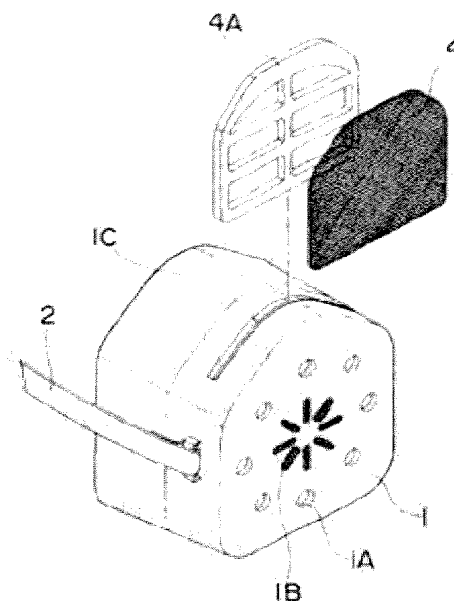
(72)Inventor : TAKATO TAKESHI

## (54) MASK APPARATUS

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a mask apparatus capable of keeping pollen, dust, etc. away from it with wind pressure and minimizing wearer's pollen/dust inhalation.

**SOLUTION:** A cover part 1, in which an air blower 3 to send air from a blower port 1A formed on a front surface of the cover part 1 is contained, is fixed to a face with a string part 2. A filter 4 to remove dust from the air sucked through an admission port 1B formed on the front surface of the cover part 1 is attached on a rear side of the air blower 3. Air can be sucked in while wind pressure from the blower port 1A blows pollen particles off. A fixing frame 4A is provided on a peripheral rim of the filter 4 and combined with it, which is detachably attached to the cover part 1.



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## CLAIMS

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[Claim(s)]

[Claim 1]

A mask device which is provided with the following, allocates two or more blowing openings in the circumference of an admission port, and is characterized by inhaling air, blowing away pollen-like particles by a wind pressure from a blowing opening formed in a front face of a cover body.

A cover body fixed to the face by a string.

A fan which ventilates from two or more blowing openings which it was stored inside this cover body and carried out the opening to a front face of a cover body.

A filter which carries out dust removing of the air which a rear face of this fan was equipped and was inhaled from an admission port of a front face of a cover body.

[Claim 2]

The mask device according to claim 1 which provides a fixed frame in said filter and with which said cover body is equipped the whole fixed frame enabling free attachment and detachment.

[Claim 3]

The mask device according to claim 1 which introduced into a suction opening air which said fan was stored inside a blast tube object stored by said cover body, and the opening of the blowing opening of this blast tube object was carried out to a blowing opening of a front face of a cover body, and provided a suction opening in the side of a blast tube object, and flowed from an admission port of said front face of a cover body.

[Claim 4]

The mask device according to claim 1 or 3 which equipped an admission port of said front face of a cover body with an auxiliary filter.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]

This invention relates to the mask device mainly used as a measure against pollinosis, and relates to the mask device which can keep away pollen, dust, etc. of the mask circumference by a wind pressure especially.

[0002]

[Description of the Prior Art]

Conventionally, the mask indicated to the patent documents 1 and the patent documents 2 is proposed as a mask used for pollinosis etc.

[0003]

The hygienic mask indicated to the patent documents 1 wraps the cloth impregnated with propolis liquid in gauze, and it is applied and used for it inside a mask. According to this mask, it is going to improve pollinosis by absorbing a propolis liquid ingredient.

[0004]

On the other hand, in the mask for pollinosis indicated to the patent documents 2, the nonwoven fabric into which drugs, such as eucalyptus RAJIATA, were infiltrated is stuck between the gauze of a mask. The drugs effects, such as eucalyptus RAJIATA, are made to apply to pollinosis in this mask for pollinosis.

[0005]

[Patent documents 1]

JP,H5-76597,A

[Patent documents 2]

JP,H11-342215,A

[0006]

[Problem(s) to be Solved by the Invention]

However, in the mask indicated to the patent documents 1 and 2, drug effect, such as a propolis liquid ingredient with which a mask is impregnated, and eucalyptus RAJIATA applied to a mask, is expected from pollinosis. For this reason, since a mask [ which is generally marketed ] and structure top does not change at all when an effect does not have such drug effect in the therapy or improvement of pollinosis, the effect more than a commercial mask is not acquired.

[0007]

Showing the symptoms of pollinosis by absorbing the pollen of a certain kind which disperses in the air is known. Then, in order to make it not absorb this pollen, it is desirable to make it not bring close the pollen which disperses in the air around a throat or a mouth. However, it cannot prevent from bringing pollen approaching the circumference of a mask, etc. close in the mask generally marketed and the mask indicated to said patent documents.

[0008]

Then, it was created that this invention should cancel above-mentioned SUBJECT, and it is keeping away pollen, dust, etc. of the mask circumference by a wind pressure, and aims at offer of the mask device which can lessen pollen etc. to attract infinite.

[0009]

[Means for Solving the Problem]

In order to attain the purpose mentioned above, the 1st means of this invention, The cover body 1 fixed to the face by the string 2, and the fan 3 which ventilates from two or more blowing openings 1A by which were stored inside this cover body 1 and the opening was carried out to cover body 1 front face, A rear face of this fan 3 is equipped and it consists of the filter 4 which carries out dust removing of the air inhaled from the admission port 1B of cover body 1 front face, Two or more blowing openings 1A are allocated in the circumference of the admission port 1B, and it is in having inhaled air, blowing away pollen-like particles by a wind pressure from a blowing opening formed in cover body 1 front face.

[0010]

The 2nd means forms the fixed frame 4A in a peripheral edge of the filter 4, and he is trying to equip said cover body 1 with it, enabling free fixed frame 4A every attachment and detachment.

[0011]

The fan 3 in the 3rd means is stored inside the blast tube object 5 stored by said cover body 1, and carry out the opening of the blowing opening 5A of this blast tube object 5 to the blowing opening 1A of a front face of the cover body 1, and. The suction opening 5B is formed in the side of the blast tube object 5, and air which flowed from the admission port 1B of said cover body 1 front face is introduced into the suction opening 5B.

[0012]

The 4th means is equipping the admission port 1B of cover body 1 front face with the auxiliary filter 6, and carries out dust removing of the air in early stages of suction.

[0013]

Pollen of the face circumference, pollen-like particles, dust, etc. are blown away, and pollen etc. are kept from approaching around the admission port 1B with the fan 3 according to this invention. And particles, such as these pollen, inhale air which decreased extremely in the cover body 1, and carry out dust removing anew with the filter 4.

[0014]

[Embodiment of the Invention]

Hereafter, an embodiment of the invention is described with reference to Drawings.

[0015]

The basic constitution of this invention mask device consists of the cover body 1, the string 2, the fan 3, the filter 4, and the blast tube object 5 (refer to drawing 1).

[0016]

It is formed with a flexible synthetic resin material etc., and fixes to the face by the string 2, and the cover body 1 is a wrap thing about a mouth and a nose, and equips this inside with the fan 3 and the filter 4. Under the present circumstances, it is also possible to form the member which makes construction material in contact with a face the construction material which was extremely rich in pliability, and equips with the fan 3 or the filter 4 with a hard material.

[0017]

The opening of the blowing opening 1A and the admission port 1B is carried out at the front face of the cover body 1. The blowing opening 1A discharges the wind from the fan 3 with which cover body 1 inside was equipped, and inhales air in the cover body 1 from the admission port 1B. These blowing openings 1A and the admission port 1B are separated inside the cover body 1 (refer to drawing 2). That is, the blast tube object 5 is connected with the blowing opening 1A, and the fan 3 is stored inside this blast tube object 5. And the blowing opening 5A of the blast tube object 5 is connected with the blowing opening 1A of the cover body 1. The suction opening 5B which, on the other hand, takes in the air inhaled from the admission port 1B in the blast tube object 5 is trepanned on the side of the blast tube object 5 (refer to drawing 3). As a result, the air of cover body 1 front face is inhaled by cover body 1 inside from the admission port 1B, is attracted by blast tube object 5 inside from the suction opening 5B of the blast tube object 5 side, and is ventilated from the blowing opening 1A via the blowing opening 5A by the fan 3.

[0018]

The fan 3 operates with a cell or a portable power supply etc. which is not illustrated, and always ventilates from two or more blowing openings 1A which carried out the opening to the

front face of the cover body 1. This wind is established so that a radial direction may be further ventilated from the circumference of said admission port 1B (refer to drawing 2). That is, the blowing opening 1A is allocated so that the admission port 1B may be surrounded, and he is trying not to bring the pollen of the admission port 1B circumference, pollen-like particles, or dust close to the admission port 1B by a wind pressure by ventilating in the shape of a barrier. As a result, air with few particles, such as pollen, is inhaled from the admission port 1B.

[0019]

The filter 4 carries out dust removing of the air inhaled inside the cover body 1. A nonwoven fabric, gauze, an electrostatic filter, etc. are used as this filter 4. It becomes possible to catch to very detailed particles by using an electrostatic filter especially, and it is preferred also as a mask of protection against infectious diseases, such as virus prevention and SARS besides the measure against pollinosis. The rear face of the fan 3 is equipped with this filter 4, enabling free attachment and detachment. The filter 4 of the graphic display has formed the fixed frame 4A which prepares the shape of the filter 4 (refer to drawing 1). And fixed frame 4A every slide insertion of the filter 4 is carried out to the slide groove part 1D of cover body 1 inside from the slit 1C for filter 4 wearing provided in the upper surface of the cover body 1. The numerals 1E in a figure fix the fan 3 and the blast tube object 5, and they are the divider plates 1E which have a circulating hole of air in the field which touches the filter 4 (refer to drawing 2). The attachment-and-detachment means of this filter 4 should just be a means which can perform exchange of not only the example of a graphic display but the filter 4.

[0020]

The numerals 6 shown in drawing 3 are the auxiliary filters with which the admission port 1B of cover body 1 front face was equipped. Before carrying out dust removing of the air in early stages of suction and fully being ventilated from the blowing opening 1A, when the pollen etc. which have dispersed around the admission port 1B are absorbed by the admission port 1B, dust removing especially of this auxiliary filter 6 is carried out. Always clean use is attained by enabling exchange also of this auxiliary filter 6. In particular, in this auxiliary filter 6, when an electrostatic filter is used with said filter 4, the very high dust-removing effect is acquired.

[0021]

[Effect of the Invention]

By having constituted like \*\*\*\*, this invention attained the original purpose. Namely, the cover body 1 fixed to the face by the string 2 and the fan 3 which ventilates from two or more blowing openings 1A by which were stored inside this cover body 1 and the opening was carried out to cover body 1 front face, The rear face of this fan 3 is equipped and it consists of the filter 4 which carries out dust removing of the air inhaled from the admission port 1B of cover body 1 front face, By having allocated two or more blowing openings 1A in the circumference of the admission port 1B, and having inhaled air, blowing away pollen-like particles by the wind

pressure from the blowing opening 1A formed in cover body 1 front face, Pollen etc. which attract pollen, dust, etc. of this invention mask device circumference by keeping away by a wind pressure can be lessened infinite.

[0022]

Since the fixed frame 4A is formed in the peripheral edge of the filter 4 and said cover body 1 is equipped, enabling free fixed frame 4A every attachment and detachment, exchange of the filter 4 is able to use the easy and always clean filter 4.

[0023]

The fan 3 is stored inside the blast tube object 5 stored by said cover body 1, and carry out the opening of the blowing opening 5A of this blast tube object 5 to the blowing opening 1A of the front face of the cover body 1, and. The suction opening 5B is formed in the side of the blast tube object 5, and since the air which flowed from the admission port 1B of said cover body 1 front face is introduced into the suction opening 5B, the pollen and the dust of cover body 1 front face can be blown away efficiently.

[0024]

And by equipping the admission port 1B of cover body 1 front face with the auxiliary filter 6, since dust removing of the air in early stages of suction is carried out, pollen, dust, etc. can be certainly prevented from invading into cover body 1 inside.

[0025]

Thus, according to this invention, the useful effect that pollen etc. which attract pollen, dust, etc. of the mask circumference by keeping away by a wind pressure can be lessened infinite etc. is done so.

[Brief Description of the Drawings]

[Drawing 1]one working example of this invention is shown -- it is an abbreviation exploded perspective view in part.

[Drawing 2]It is a flat section showing the inside of this invention.

[Drawing 3]It is a flat section showing the blast tube object of this invention.

[Description of Notations]

- 1 Cover body 1A blowing opening
- 1B Admission port
- 1C Slit
- 1D Slide groove part
- 1E Divider plate
- 2 String
- 3 Fan
- 4 Filter 4A Fixed frame
- 5 Blast tube object 5A blowing opening



5B Suction opening

6 Auxiliary filter

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TECHNICAL FIELD

---

[Field of the Invention]

This invention relates to the mask device mainly used as a measure against pollinosis, and relates to the mask device which can keep away pollen, dust, etc. of the mask circumference by a wind pressure especially.

[0002]

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PRIOR ART

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[Description of the Prior Art]

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[0003]

The hygienic mask indicated to the patent documents 1 wraps the cloth impregnated with propolis liquid in gauze, and it is applied and used for it inside a mask. According to this mask, it is going to improve pollinosis by absorbing a propolis liquid ingredient.

[0004]

On the other hand, in the mask for pollinosis indicated to the patent documents 2, the nonwoven fabric into which drugs, such as eucalyptus RAJIATA, were infiltrated is stuck between the gauze of a mask. The drugs effects, such as eucalyptus RAJIATA, are made to apply to pollinosis in this mask for pollinosis.

[0005]

[Patent documents 1]

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## EFFECT OF THE INVENTION

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[Effect of the Invention]

It constituted from this invention like \*\*\*\*.

Therefore, the original purpose was attained.

Namely, the cover body 1 fixed to the face by the string 2 and the fan 3 which ventilates from two or more blowing openings 1A by which were stored inside this cover body 1 and the opening was carried out to cover body 1 front face, The rear face of this fan 3 is equipped and it consists of the filter 4 which carries out dust removing of the air inhaled from the admission port 1B of cover body 1 front face, By having allocated two or more blowing openings 1A in the circumference of the admission port 1B, and having inhaled air, blowing away pollen-like particles by the wind pressure from the blowing opening 1A formed in cover body 1 front face, Pollen etc. which attract pollen, dust, etc. of this invention mask device circumference by keeping away by a wind pressure can be lessened infinite.

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since dust removing of the air in early stages of suction is carried out, pollen, dust, etc. can be certainly prevented from invading into cover body 1 inside.

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**TECHNICAL PROBLEM**

---

[Problem(s) to be Solved by the Invention]

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Showing the symptoms of pollinosis by absorbing the pollen of a certain kind which disperses in the air is known. Then, in order to make it not absorb this pollen, it is desirable to make it not bring close the pollen which disperses in the air around a throat or a mouth. However, it cannot prevent from bringing pollen approaching the circumference of a mask, etc. close in the mask generally marketed and the mask indicated to said patent documents.

[0008]

Then, it was created that this invention should cancel above-mentioned SUBJECT, and it is keeping away pollen, dust, etc. of the mask circumference by a wind pressure, and aims at offer of the mask device which can lessen pollen etc. to attract infinite.

[0009]

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## MEANS

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[Means for Solving the Problem]

In order to attain the purpose mentioned above, the 1st means of this invention, The cover body 1 fixed to the face by the string 2, and the fan 3 which ventilates from two or more blowing openings 1A by which were stored inside this cover body 1 and the opening was carried out to cover body 1 front face, A rear face of this fan 3 is equipped and it consists of the filter 4 which carries out dust removing of the air inhaled from the admission port 1B of cover body 1 front face, Two or more blowing openings 1A are allocated in the circumference of the admission port 1B, and it is in having inhaled air, blowing away pollen-like particles by a wind pressure from a blowing opening formed in cover body 1 front face.

[0010]

The 2nd means forms the fixed frame 4A in a peripheral edge of the filter 4, and he is trying to equip said cover body 1 with it, enabling free fixed frame 4A every attachment and detachment.

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[0012]

The 4th means is equipping the admission port 1B of cover body 1 front face with the auxiliary filter 6, and carries out dust removing of the air in early stages of suction.

[0013]

Pollen of the face circumference, pollen-like particles, dust, etc. are blown away, and pollen etc. are kept from approaching around the admission port 1B with the fan 3 according to this

invention. And particles, such as these pollen, inhale air which decreased extremely in the cover body 1, and carry out dust removing anew with the filter 4.

[0014]

[Embodiment of the Invention]

Hereafter, an embodiment of the invention is described with reference to Drawings.

[0015]

The basic constitution of this invention mask device consists of the cover body 1, the string 2, the fan 3, the filter 4, and the blast tube object 5 (refer to drawing 1).

[0016]

It is formed with a flexible synthetic resin material etc., and fixes to the face by the string 2, and the cover body 1 is a wrap thing about a mouth and a nose, and equips this inside with the fan 3 and the filter 4. Under the present circumstances, it is also possible to form the member which makes construction material in contact with a face the construction material which was extremely rich in pliability, and equips with the fan 3 or the filter 4 with a hard material.

[0017]

The opening of the blowing opening 1A and the admission port 1B is carried out at the front face of the cover body 1. The blowing opening 1A discharges the wind from the fan 3 with which cover body 1 inside was equipped, and inhales air in the cover body 1 from the admission port 1B. These blowing openings 1A and the admission port 1B are separated inside the cover body 1 (refer to drawing 2). That is, the blast tube object 5 is connected with the blowing opening 1A, and the fan 3 is stored inside this blast tube object 5. And the blowing opening 5A of the blast tube object 5 is connected with the blowing opening 1A of the cover body 1. The suction opening 5B which, on the other hand, takes in the air inhaled from the admission port 1B in the blast tube object 5 is trepanned on the side of the blast tube object 5 (refer to drawing 3). As a result, the air of cover body 1 front face is inhaled by cover body 1 inside from the admission port 1B, is attracted by blast tube object 5 inside from the suction opening 5B of the blast tube object 5 side, and is ventilated from the blowing opening 1A via the blowing opening 5A by the fan 3.

[0018]

The fan 3 operates with a cell or a portable power supply etc. which is not illustrated, and always ventilates from two or more blowing openings 1A which carried out the opening to the front face of the cover body 1. This wind is established so that a radial direction may be further ventilated from the circumference of said admission port 1B (refer to drawing 2). That is, the blowing opening 1A is allocated so that the admission port 1B may be surrounded, and he is trying not to bring the pollen of the admission port 1B circumference, pollen-like particles, or dust close to the admission port 1B by a wind pressure by ventilating in the shape of a barrier. As a result, air with few particles, such as pollen, is inhaled from the admission port 1B.



[0019]

The filter 4 carries out dust removing of the air inhaled inside the cover body 1. A nonwoven fabric, gauze, an electrostatic filter, etc. are used as this filter 4. It becomes possible to catch to very detailed particles by using an electrostatic filter especially, and it is preferred also as a mask of protection against infectious diseases, such as virus prevention and SARS besides the measure against pollinosis. The rear face of the fan 3 is equipped with this filter 4, enabling free attachment and detachment. The filter 4 of the graphic display has formed the fixed frame 4A which prepares the shape of the filter 4 (refer to drawing 1). And fixed frame 4A every slide insertion of the filter 4 is carried out to the slide groove part 1D of cover body 1 inside from the slit 1C for filter 4 wearing provided in the upper surface of the cover body 1. The numerals 1E in a figure fix the fan 3 and the blast tube object 5, and they are the divider plates 1E which have a circulating hole of air in the field which touches the filter 4 (refer to drawing 2). The attachment-and-detachment means of this filter 4 should just be a means which can perform exchange of not only the example of a graphic display but the filter 4.

[0020]

The numerals 6 shown in drawing 3 are the auxiliary filters with which the admission port 1B of cover body 1 front face was equipped. Before carrying out dust removing of the air in early stages of suction and fully being ventilated from the blowing opening 1A, when the pollen etc. which have dispersed around the admission port 1B are absorbed by the admission port 1B, dust removing especially of this auxiliary filter 6 is carried out. Always clean use is attained by enabling exchange also of this auxiliary filter 6. In particular, in this auxiliary filter 6, when an electrostatic filter is used with said filter 4, the very high dust-removing effect is acquired.

[0021]

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1]one working example of this invention is shown -- it is an abbreviation exploded perspective view in part.

[Drawing 2]It is a flat section showing the inside of this invention.

[Drawing 3]It is a flat section showing the blast tube object of this invention.

[Description of Notations]

1 Cover body 1A blowing opening

1B Admission port

1C Slit

1D Slide groove part

1E Divider plate

2 String

3 Fan

4 Filter 4A Fixed frame

5 Blast tube object 5A blowing opening

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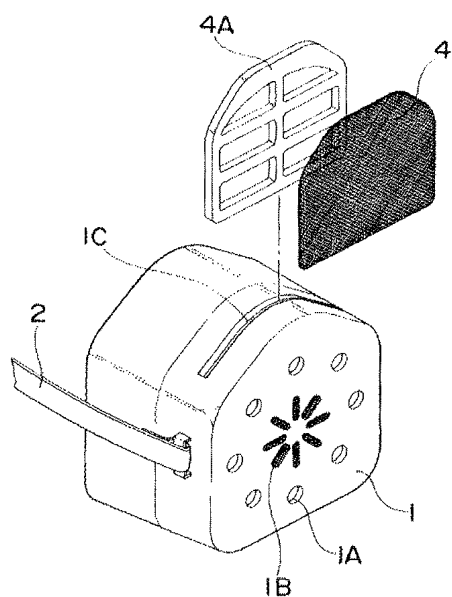
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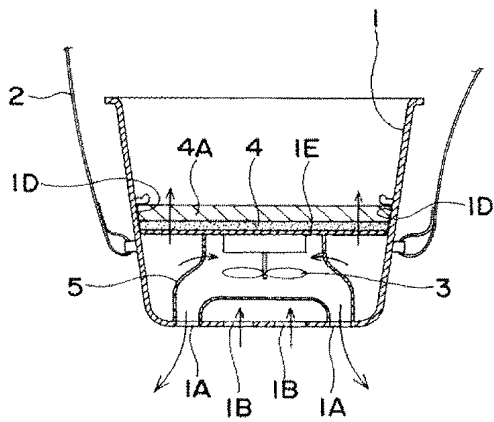
DRAWINGS

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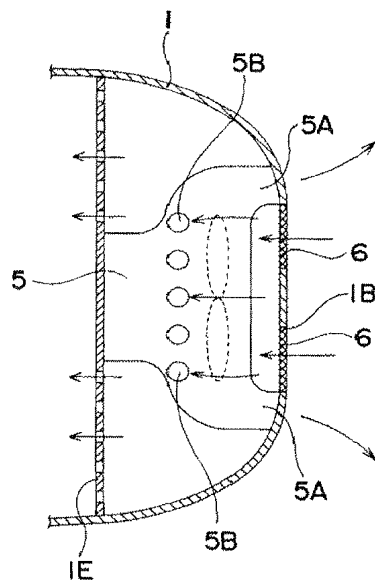
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Translation done.]

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A 6 1 M 16/06

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(71) 出願人 503186559

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Fターム(参考) 2E185 AA07 BA02 CC32

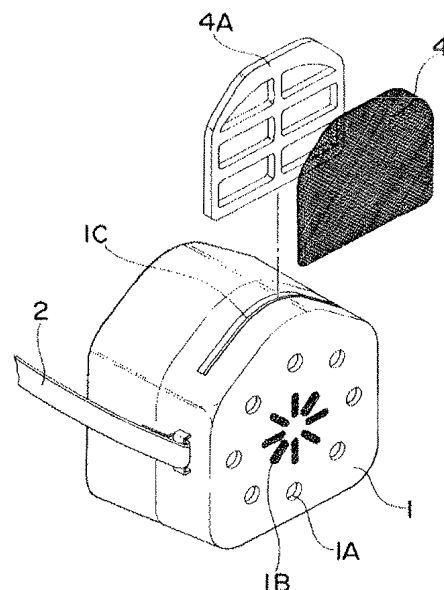
(54) 【発明の名称】 マスク装置

(57) 【要約】

【解決手段】紐体2で顔面に固定するカバー体1を設ける。該カバー体1の内部に収納されカバー体1前面の送風口1Aから送風する送風機3を設ける。該送風機3の後面に装着され、カバー体1前面の吸入口1Bから吸入した空気を除塵するフィルター4を設ける。カバー体1前面に形成される送風口1Aからの風圧で花粉状粒子を吹飛ばしながら空気を吸入する。フィルター4の周囲縁に固定棒4Aを設け、前記カバー体1に固定棒4Aごと着脱自在に装着する。

【効果】マスク周辺の花粉や塵埃等を風圧で遠ざけることで、吸引する花粉等を限りなく少なくすることができる。

【選択図】 図1



## 【特許請求の範囲】

## 【請求項1】

紐体で顔面に固定するカバー体と、該カバー体の内部に収納されカバー体前面に開口した複数の送風口から送風する送風機と、該送風機の後面に装着され、カバー体前面の吸入口から吸入した空気を除塵するフィルターとからなり、吸入口の周囲に複数の送風口を配設し、カバー体前面に形成される送風口からの風圧で花粉状粒子を吹飛ばしながら空気を吸入するようにしたことを特徴とするマスク装置。

## 【請求項2】

前記フィルターに固定枠を設け、前記カバー体に固定枠ごと着脱自在に装着される請求項1記載のマスク装置。

## 【請求項3】

前記送風機は、前記カバー体に収納された送風管体の内部に収納され、該送風管体の送風口をカバー体前面の送風口に開口すると共に、送風管体の側面に吸引口を設け、前記カバー体前面の吸入口から流入した空気を吸引口に導入するようにした請求項1記載のマスク装置。

## 【請求項4】

前記カバー体前面の吸入口に補助フィルターを装着した請求項1又は3記載のマスク装置。

## 【発明の詳細な説明】

## 【0001】

## 【発明の属する技術分野】

本発明は、主に花粉症対策として使用するマスク装置に係り、特に、マスク周辺の花粉や塵埃等を風圧で遠ざけることができるマスク装置に関する。

## 【0002】

## 【従来技術】

従来、花粉症などに用いるマスクとして、特許文献1及び特許文献2に記載されたマスクが提案されている。

## 【0003】

特許文献1に記載された衛生マスクは、プロポリス液を含浸させた布をガーゼで包み、マスクの内側に当てて使用するものである。このマスクによると、プロポリス液成分を吸い込むことにより、花粉症を改善しようとするものである。

## 【0004】

一方、特許文献2に記載された花粉症用マスクでは、ユーカリ・ラジアタ等の薬剤を染み込ませた不織布をマスクのガーゼの間に貼り付けている。この花粉症用マスクでは、ユーカリ・ラジアタ等の薬剤効果を花粉症に適用させるものである。

## 【0005】

## 【特許文献1】

特開平5-76597号公報

## 【特許文献2】

特開平11-342215号公報

## 【0006】

## 【発明が解決しようとする課題】

しかしながら、特許文献1、2に記載されたマスクでは、マスクに含浸するプロポリス液成分や、マスクに塗布するユーカリ・ラジアタ等の薬効を花粉症に期待するものである。このため、これらの薬効が花粉症の治療や改善に効果がない場合は、一般に市販されているマスクと構造上は全く変わらないので、市販のマスク以上の効果は得られない。

## 【0007】

花粉症は、空気中に飛散するある種の花粉を吸い込むことで発症することが知られている。そこで、この花粉を吸い込まないようにするには、空気中に飛散する花粉を、のどや口の周辺に近付けないようにすることが望ましい。しかしながら、一般に市販されているマ

スクや、前記特許文献に記載されたマスクでは、マスクの周囲に近づく花粉等を近づけないようにすることはできない。

【0008】

そこで、本発明は上述の課題を解消すべく創出されたもので、マスク周辺の花粉や塵埃等を風圧で遠ざけることで、吸引する花粉等を限りなく少なくすることが可能なマスク装置の提供を目的とするものである。

【0009】

【課題を解決するための手段】

上述した目的を達成するため、本発明の第1の手段は、紐体2で顔面に固定するカバー体1と、該カバー体1の内部に収納されカバー体1前面に開口された複数の送風口1Aから送風する送風機3と、該送風機3の後面に装着され、カバー体1前面の吸入口1Bから吸入した空気を除塵するフィルター4とからなり、吸入口1Bの周囲に複数の送風口1Aを配設し、カバー体1前面に形成される送風口からの風圧で花粉状粒子を吹飛ばしながら空気を吸入するようにしたことにある。

【0010】

第2の手段は、フィルター4の周囲縁に固定枠4Aを設け、前記カバー体1に固定枠4Aごと着脱自在に装着するようにしている。

【0011】

第3の手段における送風機3は、前記カバー体1に収納された送風管体5の内部に収納され、該送風管体5の送風口5Aをカバー体1の前面の送風口1Aに開口すると共に、送風管体5の側面に吸引口5Bを設け、前記カバー体1前面の吸入口1Bから流入した空気を吸引口5Bに導入する。

【0012】

第4の手段は、カバー体1前面の吸入口1Bに補助フィルター6を装着することで、吸引初期の空気を除塵するものである。

【0013】

本発明によると、送風機3によって顔周辺の花粉や花粉状の微粒子、塵埃などを吹き飛ばし、吸入口1Bの周辺に花粉等が近付かないようにしている。そして、これら花粉等の微粒子が極めて少なくなった空気をカバー体1内に吸入し、フィルター4で改めて除塵するものである。

【0014】

【発明の実施の形態】

以下、図面を参照して本発明の実施の形態を説明する。

【0015】

本発明マスク装置の基本構成は、カバー体1、紐体2、送風機3、フィルター4、送風管体5からなる（図1参照）。

【0016】

カバー体1は、柔軟な合成樹脂材等にて形成され、紐体2で顔面に固定して口と鼻を覆うものであり、この内部に送風機3とフィルター4とを装着する。この際、顔に接触する材質を極めて柔軟性に富んだ材質とし、送風機3やフィルター4を装着する部材を硬質の材料で形成することも可能である。

【0017】

カバー体1の前面には、送風口1Aと吸入口1Bとを開口している。送風口1Aは、カバー体1内部に装着した送風機3からの風を排出し、吸入口1Bからカバー体1内に空気を吸入する。これら送風口1Aと吸入口1Bとは、カバー体1の内部で分離している（図2参照）。すなわち、送風口1Aには、送風管体5が連結されており、この送風管体5の内部に送風機3が収納されている。そして、送風管体5の送風口5Aをカバー体1の送風口1Aに連結する。一方、吸入口1Bから吸入した空気を送風管体5内に取り入れる吸引口5Bを送風管体5の側面に開穿している（図3参照）。この結果、カバー体1前面の空気は、吸入口1Bからカバー体1内部に吸入され、送風管体5側面の吸引口5Bから送風管

体5内部に吸引され、送風機3によって送風口5Aを介し送風口1Aから送風されるものである。

【0018】

送風機3は、図示しない電池あるいは携帯用電源などで作動し、カバー体1の前面に開口した複数の送風口1Aから常時送風する。この風向きは、前記吸入口1Bの周囲から更に放射方向に送風するように設けている(図2参照)。すなわち、送風口1Aは、吸入口1Bを囲むように配設し、バリアー状に送風することで、吸入口1B周辺の花粉や花粉状の微粒子、あるいは塵埃等を風圧で吸入口1Bに近付けないようにしている。この結果、吸入口1Bからは、花粉等の微粒子が少ない空気が吸入されるものである。

【0019】

フィルター4は、カバー体1の内部に吸入された空気を除塵するものである。このフィルター4として、不織布やガーゼ、静電フィルター等を用いる。特に、静電フィルターを用いることで、極めて微細な粒子まで捕らえることが可能になり、花粉症対策のほか、ウィルス防止やSARSなどの感染症予防のマスクとしても好適である。このフィルター4は、送風機3の後面に着脱自在に装着される。図示のフィルター4は、フィルター4の形状を整える固定枠4Aを設けている(図1参照)。そして、カバー体1の上面に設けたフィルター4装着用のスリット1Cから、カバー体1内部のスライド溝部1Dに、フィルター4を固定枠4Aごとスライド挿入している。尚、図中符号1Eは、送風機3及び送風管体5を固定すると共に、フィルター4に接する面に空気の流通孔を有する仕切板1Eである(図2参照)。また、このフィルター4の着脱手段は、図示例に限らず、フィルター4の交換ができる手段であれば良い。

【0020】

図3に示す符号6は、カバー体1前面の吸入口1Bに装着した補助フィルターである。この補助フィルター6は、特に吸引初期の空気を除塵するもので、送風口1Aから十分に送風される前に、吸入口1Bの周囲に飛散している花粉等が吸入口1Bに吸い込まれたときに除塵する。この補助フィルター6も交換自在にすることで、常に清潔な使用が可能になる。特に、この補助フィルター6を、前記フィルター4と共に、静電フィルターを用いた場合には、極めて高い除塵効果が得られるものになる。

【0021】

【発明の効果】

本発明は上述の如く構成したことにより、当初の目的を達成した。すなわち、紐体2で顔面に固定するカバー体1と、該カバー体1の内部に収納されカバー体1前面に開口された複数の送風口1Aから送風する送風機3と、該送風機3の後面に装着され、カバー体1前面の吸入口1Bから吸入した空気を除塵するフィルター4とからなり、吸入口1Bの周囲に複数の送風口1Aを配設し、カバー体1前面に形成される送風口1Aからの風圧で花粉状粒子を吹飛ばしながら空気を吸入するようにしたことにより、本発明マスク装置周辺の花粉や塵埃等を風圧で遠ざけることで、吸引する花粉等を限りなく少なくすることができる。

【0022】

また、フィルター4の周囲縁に固定枠4Aを設け、前記カバー体1に固定枠4Aごと着脱自在に装着するので、フィルター4の交換が容易で常に清潔なフィルター4を使用することが可能である。

【0023】

更に、送風機3は、前記カバー体1に収納された送風管体5の内部に収納され、該送風管体5の送風口5Aをカバー体1の前面の送風口1Aに開口すると共に、送風管体5の側面に吸引口5Bを設け、前記カバー体1前面の吸入口1Bから流入した空気を吸引口5Bに導入するので、カバー体1前面の花粉や塵埃を効率良く吹飛ばすことができる。

【0024】

しかも、カバー体1前面の吸入口1Bに補助フィルター6を装着することで、吸引初期の空気を除塵するので、花粉や塵埃等がカバー体1内部へ侵入するのを確実に防止すること



ができる。

【0025】

このように、本発明によると、マスク周辺の花粉や塵埃等を風圧で遠ざけることで、吸引する花粉等を限りなく少なくすることができる、などといった有益な効果を奏するものである。

【図面の簡単な説明】

【図1】本発明の一実施例を示す一部省略分解斜視図である。

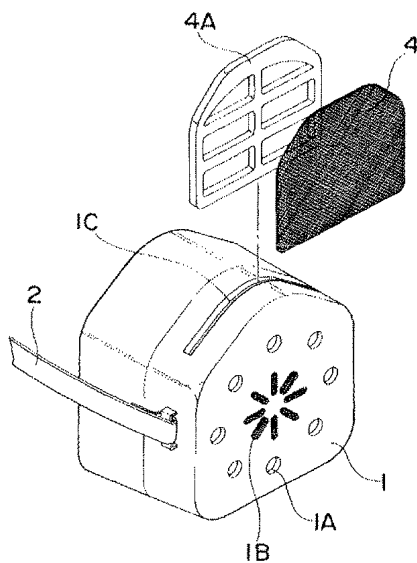
【図2】本発明の内部を示す平断面図である。

【図3】本発明の送風管体を示す平断面図である。

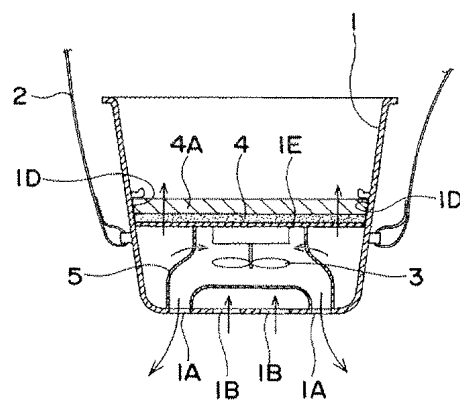
【符号の説明】

- |            |         |
|------------|---------|
| 1 カバー体     | 1 A 送風口 |
| 1 B 吸入口    |         |
| 1 C スリット   |         |
| 1 D スライド溝部 |         |
| 1 E 仕切板    |         |
| 2 組体       |         |
| 3 送風機      |         |
| 4 フィルター    | 4 A 固定枠 |
| 5 送風管体     | 5 A 送風口 |
| 5 B 吸引口    |         |
| 6 補助フィルター  |         |

【図1】



【図2】



【図3】

